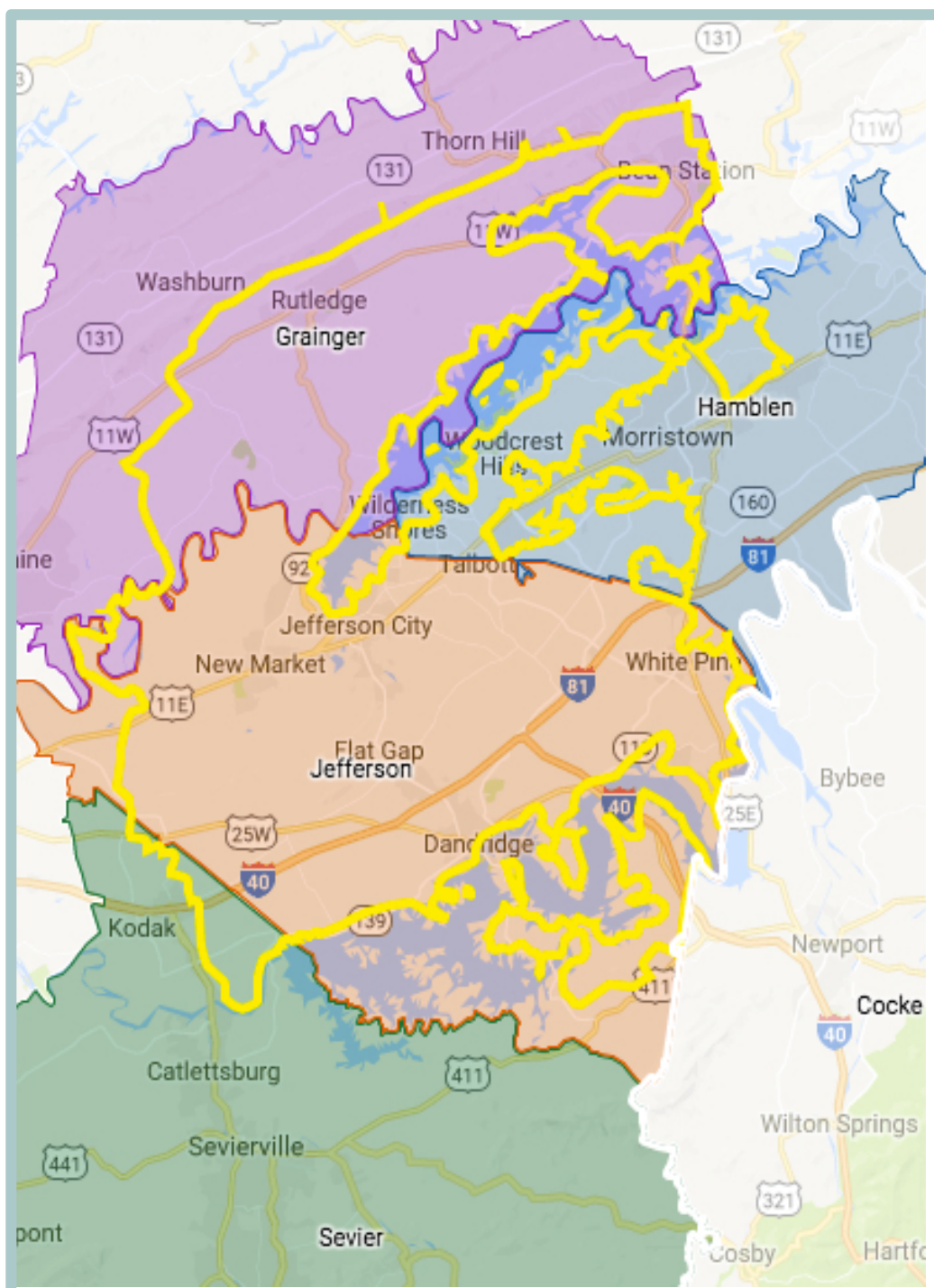


Developing a Market Assessment for On-Bill Financing

For Appalachian Electric Cooperative



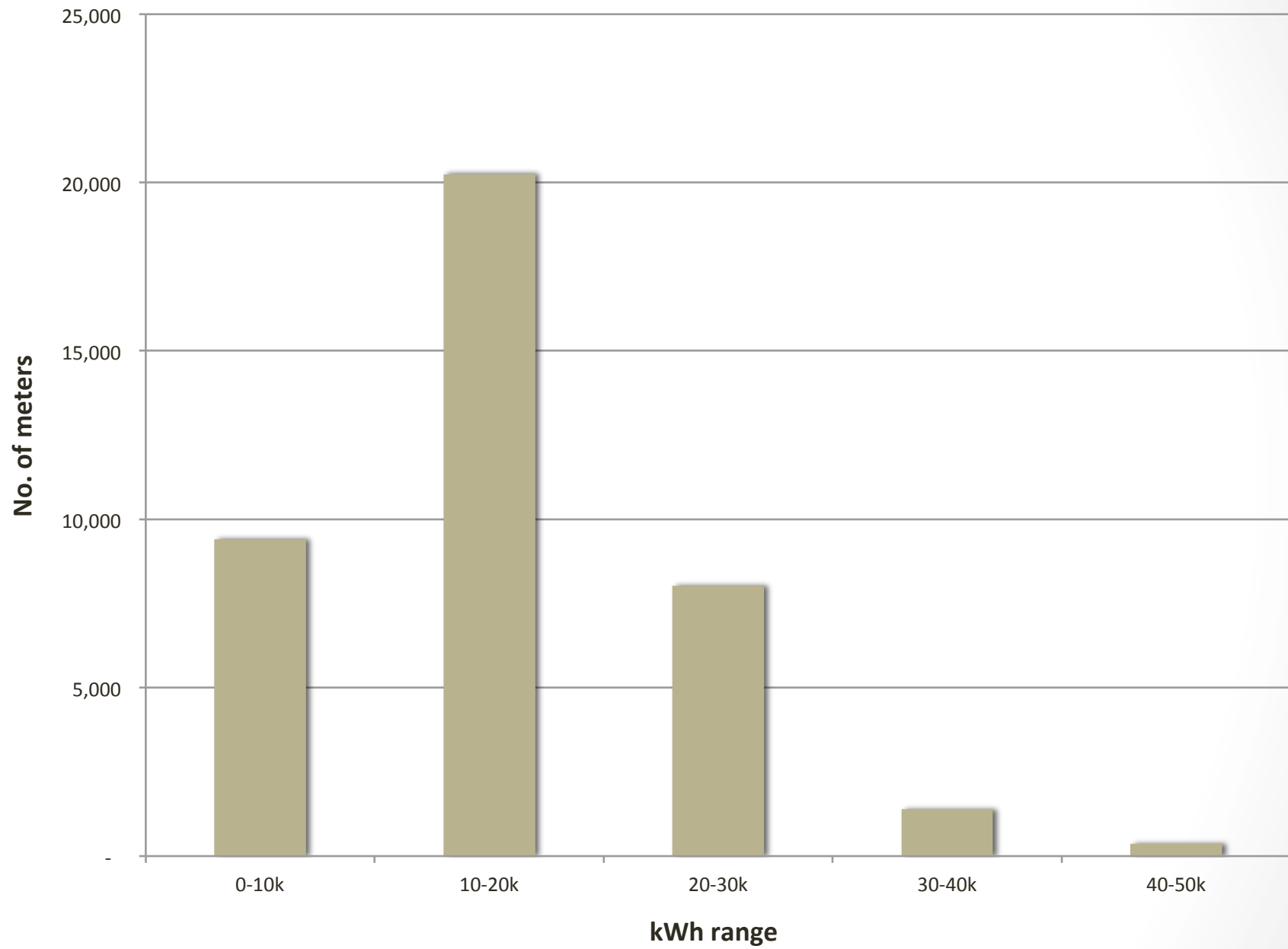
Meter data

- 45,153 total meters
- 39,434 residential (AEC 2016)
 - Approx. 1,000 using less than 3 kWh/day
 - 400 using 0 kWh
 - 38,436 “active” meters
- 3 meters w/ neg. kWh (diff. each yr)

County	# meters	% meters
Jefferson	24,816	55.0%
Grainger	8,984	19.9%
Hamblen	9,631	21.3%
Sevier	1,702	3.8%
Hawkins	20	0.0%

Energy Use -- General

- Average kWh/home for all meters: 15,510
- Average kWh/home for “active” meters: 15,905
- Interesting findings:
 - A few homes show negative
 - Nine meters > 100,000 kWh
 - 1889 Oak Grove Rd, Dandridge -- trailer park (164,390 kWh)
 - 1916 Oak Grove Rd, Dandridge – mansion (120,360 kWh)
 - Many homes inactive
 - 1,000 total w/ less than 1,000 kWh (3kWh/day or less)
 - 400 w/ zero kWh



Type and Age of Housing

All Ages				
Type	Grainger	Hamblen	Jefferson	Total
Single	5,808	18,439	13,255	37,502
Multi	251	3,768	1,835	5,854
Mobile	2,893	2,263	4,589	9,745
Total	8,952	24,470	19,679	53,101

>35 years				
Type	Grainger	Hamblen	Jefferson	Total
Single	3,242	11,212	6,545	20,999
Multi	131	1845	577	2,553
Mobile	455	477	561	1,493
Total	3,828	13,534	7,683	25,045

Type and Age of Housing

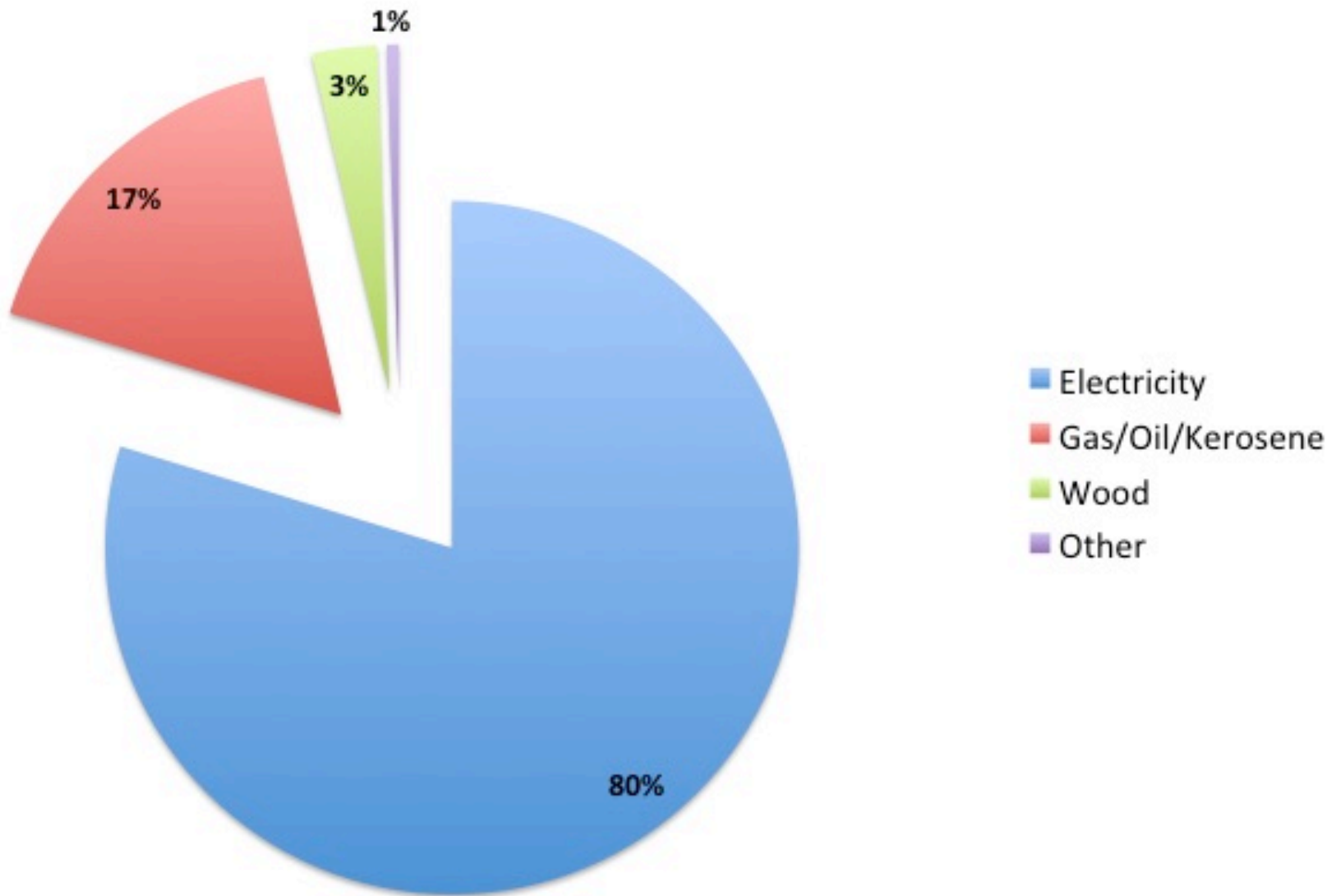
Percent Old				
Type	Grainger	Hamblen	Jefferson	Total
Single	56%	61%	49%	56%
Multi	52%	49%	31%	44%
Mobile	16%	21%	12%	15%
Total	43%	55%	39%	47%

All Ages				
	Single	Multi	Mobil	Mobil: 1979+
Grainger	65%	3%	32%	27%
Hamblen	75%	15%	9%	7%
Jefferson	67%	9%	23%	20%
Total	71%	11%	18%	16%

Housing Findings

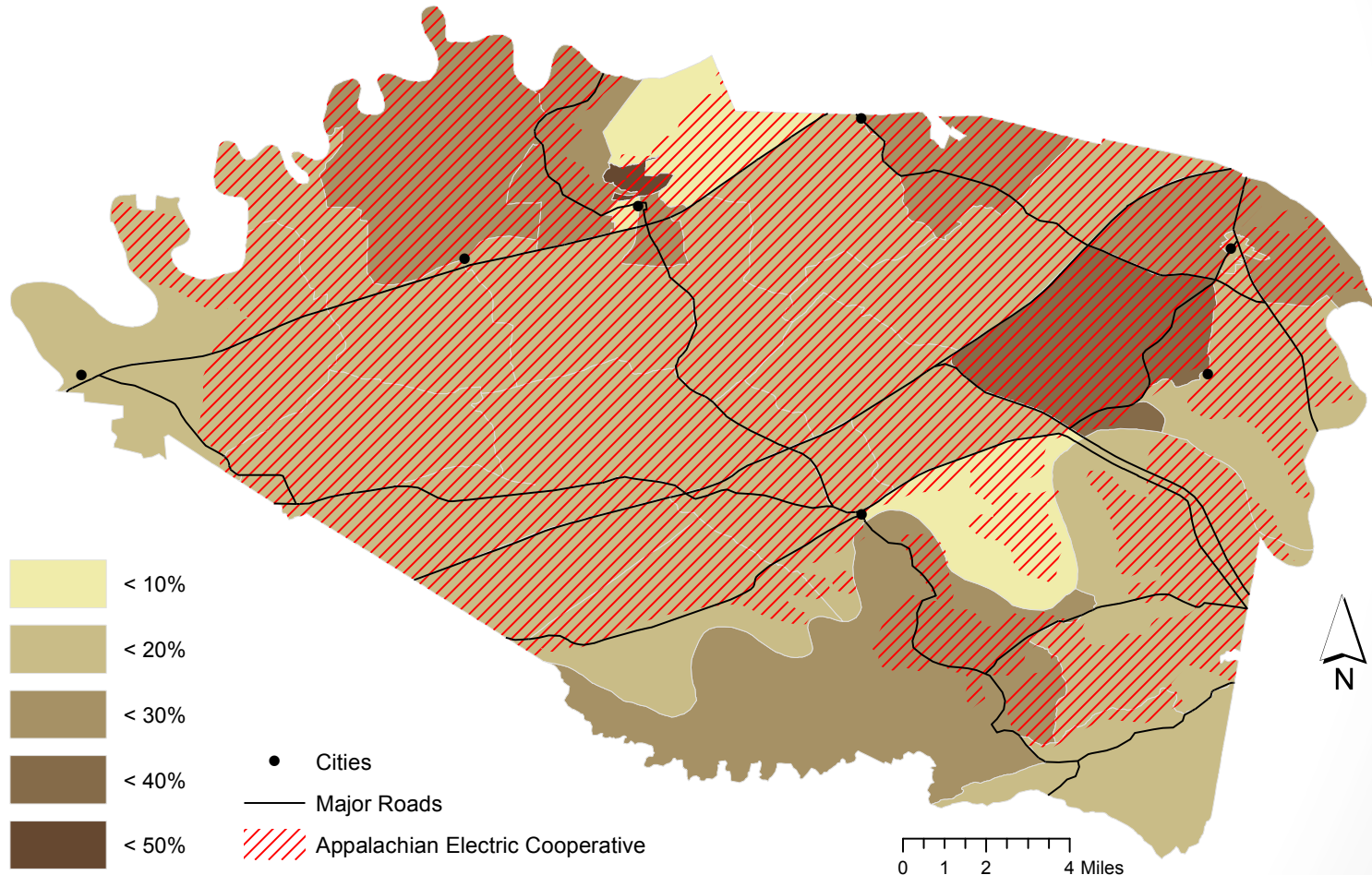
- Can “roughly” cut Grainger/Hamblen data in half (not doing that here)
- Half of all properties/units are > 35 years old
 - More than half of those are single-family properties
- Multi-family properties: 5,850
 - 64% in Hamblen, 31% Jefferson
- There are 8,250 mobile homes built after 1979
 - 70% are owner-occupied
 - Nearly half of total are in Jefferson Co.
- Approx. 70% of all housing is owner-occupied

Heating Fuels



Socio-Economic Mapping

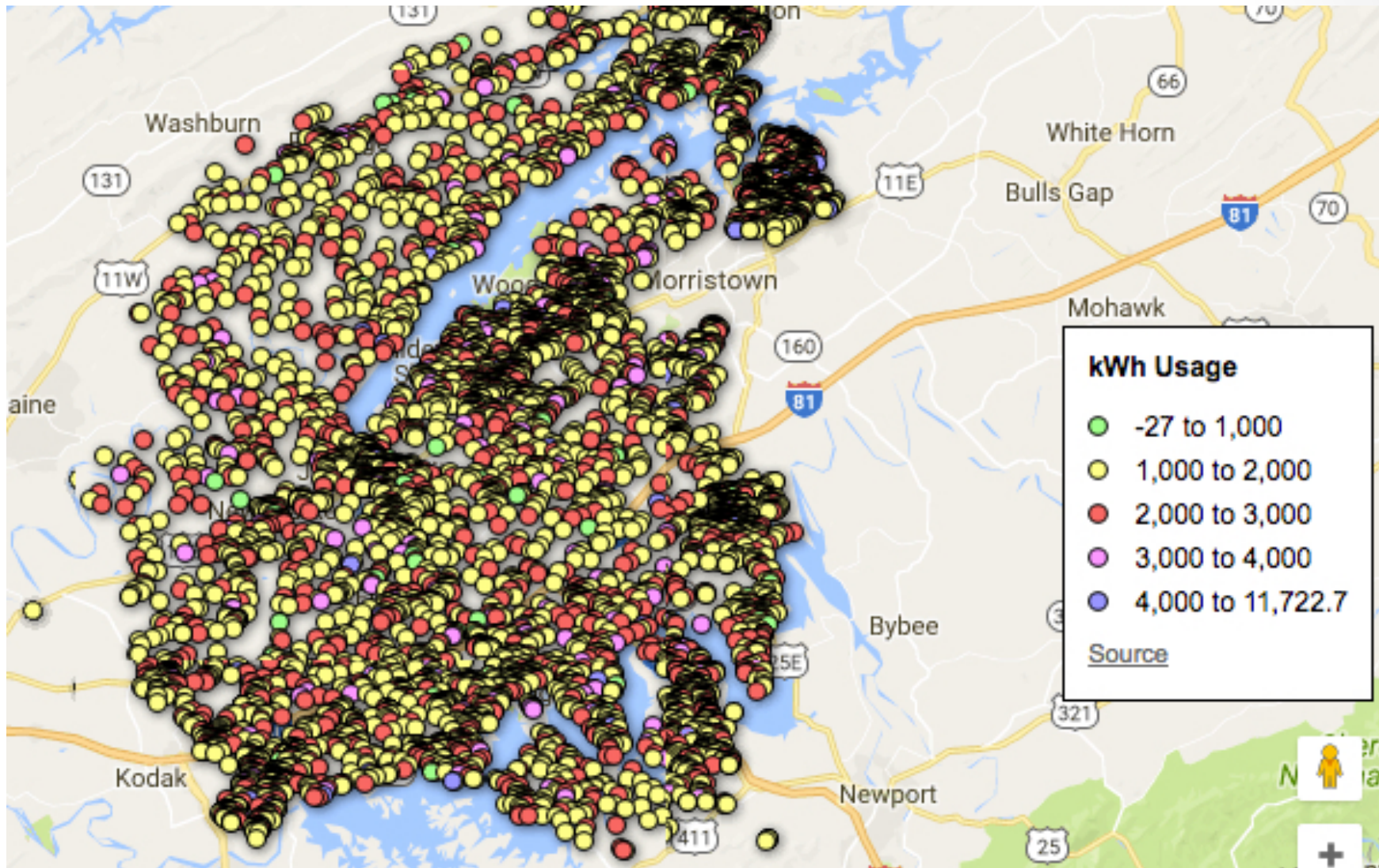
Percentage of Households below the poverty line
per Census Block Group, Jefferson County, TN



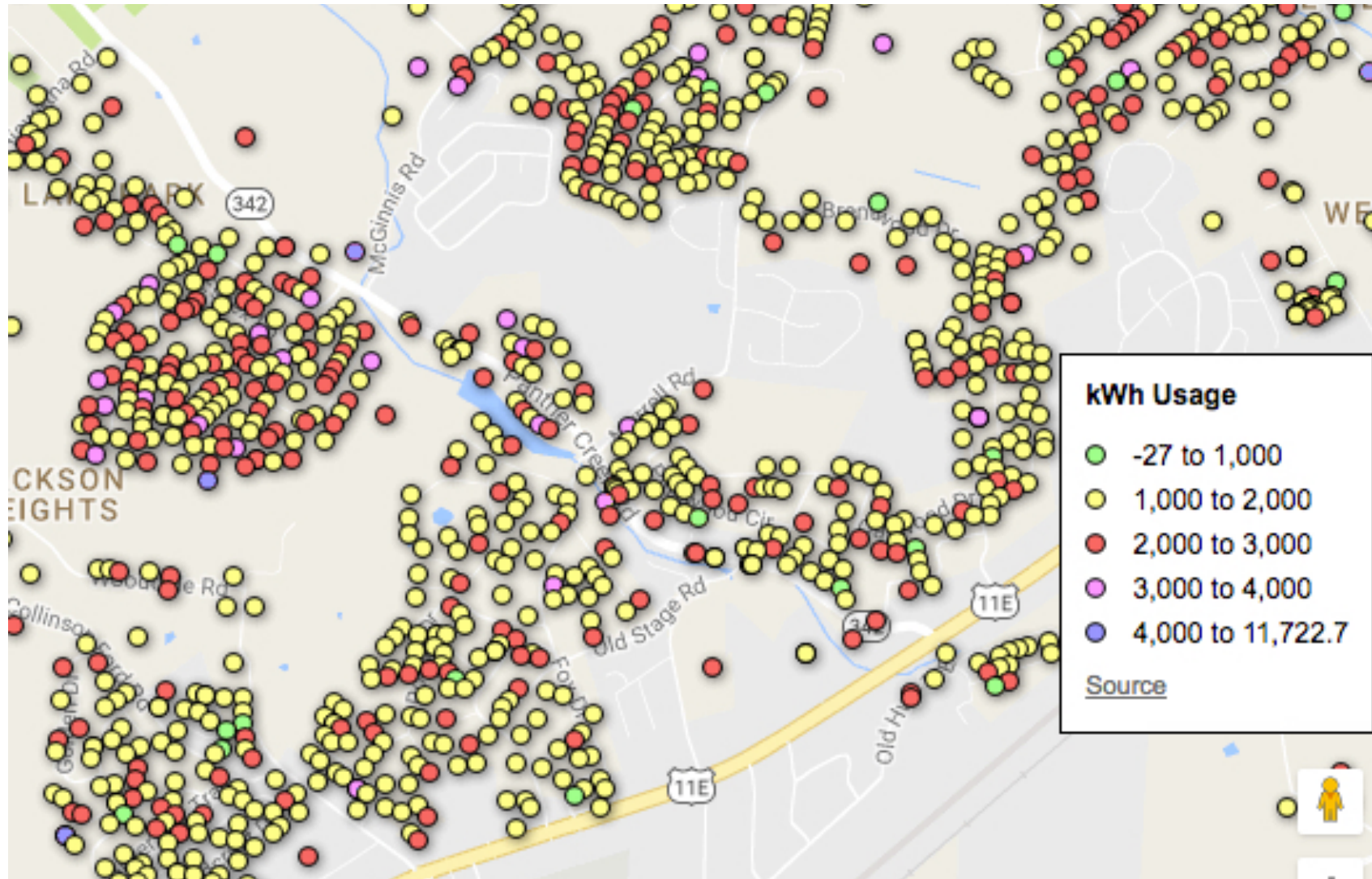
Other Data Options for Maps

- US Census
 - Number of homes living below poverty level (Block Group)
 - Age and Tenure by Housing Type (Tract)
 - Heating Fuels (Block Group)
 - Median Income
- THDA data
 - Low-Income Housing Tax Credit
 - Subsidized Multi-Family Housing Properties
 - Housing Voucher Properties
 - Cost-burdened housing data
- County Property tax data
 - Combine square footage w/ kWh use to get kWh per square foot
- US Dept of Energy

Heat Mapping



Heat Mapping



Heat Map Options

- Ran into a problem:
 - Geocoding
 - Google API can only handle first 1,000 rows
 - Looking into other solutions – there is one
- *Mapping only the higher energy users*
- 3 year trends – increase or decrease in kWh
- Winter and Summer peak (vs shoulder months)
- Combining energy use w/ other location-based data sets (e.g. property square foot, DOE LMI)
- Questions:
 - What would be most useful and highest priority for AEC?
 - Timeline?

Community Asset Mapping

